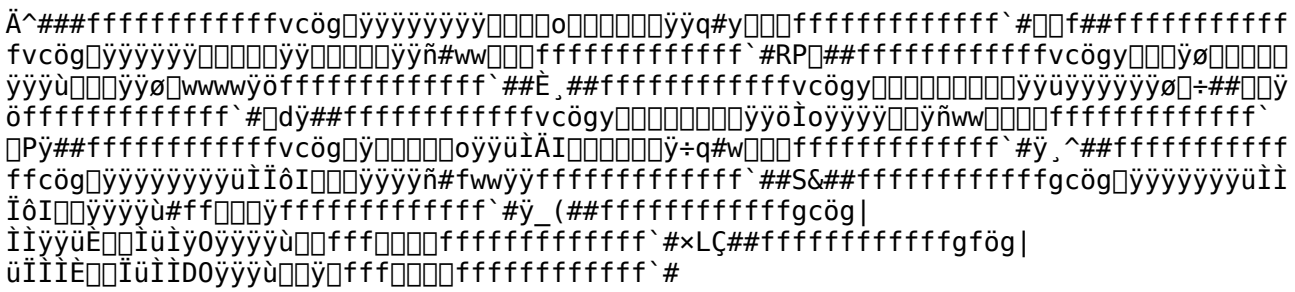

###ÿÿ#####ÿ□#ÿÿd#########d##########□###You□ve all practiced Risk Management during your careers, or you wouldn□t be here. However, as you saw in the introduction, we (naval aviation in general) aren□t doing it well enough.In FY 96, we lost 39 aircraft... we□re only scheduled to purchase 40 in FY97! Operational Risk Management doesn□t just reduce mishaps, but it improves our ability to accomplish the mission efficiently and effectively. Note the term □operational□ on this slide...it doesn□t say □safety□.The goal of this course is to give you a thorough understanding of the ORM process, selected tools, practical applications and implementation ideas so that you can lead the way for implementation in naval aviation.The introductory training which follows is designed to give the audience a basic understanding of ORM. Everyone in the command, from the most junior person to the CO, should receive introductory training.

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#,#ÿÿ####ÿÿ#####ÿ##ÿÿd#########d#########|###* ORM Terms* 5-Step ORM Process*
Causes of Risk* 4 ORM Principles* Benefits of ORM* 3 Levels of ORM* Time-
critical ORM
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û##ô#ÿÿ####ÿÿ#####ÿ##ÿÿd#########d#########t###Hazard: A condition with the potential to cause personal injury or death, property damage, or mission degradation.

###ÿÿ#####ÿ□#ÿÿd#########d#########^###Read definition. Most of us think of injury or damage when we think of hazards. But, remember the last part of this definition...anything which can cause mission degradation is a hazard. That includes enemy threats, security threats, inefficient use of assets, training degradation, something which could damage command image and credibility, etc.

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#L###Risk:  An expression of possible loss in terms of severity and probability.
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###ÿÿ#####ÿ#ÿÿd#########d#########G###Read definition. What do we mean when we say severity and probability?m

###ÿÿ#####ÿ□#ÿÿd#########d##########K###For the purposes of ORM, severity is the worst credible consequence which can occur as a result of a hazard. It is the potential degree of loss. It is an expression of how serious the injury or illness, how much equipment damage, how much lost time, money, man-hours or credibility could be experienced as a result of the hazard.¤

###ÿÿ#####ÿ#ÿÿd#########d#########¯###The probability (or likelihood that a hazard will result in a mishap or loss) is based on factors such as location, exposure, personnel, experience and historical information.#

##########ÿ□#ÿÿd#########d##########)###Let□s talk about the difference between a hazard and a risk for a moment. Many people confuse these two terms. Here are some examples:Bad weather would be a hazard. The associated risk might be that there□s a significant chance of either crashing an airplane or failing to complete the 72-hour round the clock operations planned for the exercise. Maintenance personnel walking on top of a wet aircraft during aircraft wash is a hazard. An associated risk might be that it□s likely that person will fall off the aircraft and be severely injured.9

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      ####ÿ□#ÿÿd#########d#########2##□##Iöüûç
      ä#ÿÿ(###ÿÿ####Tÿn#ÿÿK#########d#########R###Risk Assessment: The process
of detecting hazards and assessing associated risks.
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###ÿÿ#####ÿ□#ÿÿd#########d#########u###Risk assessment is the first two steps of the five step risk management process (identify hazards and assess hazards)#

###ÿÿ#####ÿ□#ÿÿd#########d#############RADM Giffin, during the GW battle group’s last deployment required his staff to present both types of controls for significant risks. The first would lower the probability of something bad happening; the second would decrease the severity if the event did occur.#

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      ####ÿ#ÿÿd#########d#########2#####ùô<þ×
$#ÿÿ$###ÿÿ####Tÿn#ÿÿK#########d############   The process of dealing with risk
associated with military operations, which includes risk assessment, risk
decision making, and implementation of effective risk controls.#
```

###ÿÿ#####ÿ#ÿÿd#########d#########Ø###The operational risk management process is a simple five-step process.The concept of applying a standard, systematic approach to minimizing risk was originally developed to improve safety in the development of weapons, aircraft, space vehicles and nuclear power. It has been embraced by many civilian corporations and the Army, and is now being implemented in the Navy, MC, Air Force and Coast Guard.Although a risk management process like this has been part of the NAVOSH program for years, it has traditionally been applied primarily to workplace hazards. However, this process is also effective when applied to planning, operations, training and procedures. Recently, in an effort to emphasize these other applications, the Navy/MC has encouraged the use of operational risk management.The five steps are:1 Identify potential causes of injury, damage or mission degradation.2 For each hazard identified, determine the associated risk in terms of severity and probability.3 Develop risk control options, then decide if benefit outweighs risk. Seek further controls or guidance from CoC, if necessary.4 Once risk decision is made, implement selected controls.5 Follow-up to ensure controls are working and watch for changes.

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> A Decision Making Tool > Increases Ability to Make Informed Decisions > Reduces Risks to Acceptable Levels

###ÿÿ#####ÿ□#ÿÿd########d########(###The ORM process:- is a decision making tool which can be used by people at all levels to increase operational effectiveness.- increases the ability to make informed decisions by providing the best baseline of knowledge and experience available.- minimizes risks to acceptable levels by systematically applying controls to each risk which is not acceptable. The amount of risk we will take in war is much greater than that we should be willing to take in peace, but the same systematic process should be used to evaluate risks in both situations.

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#□#ÿÿ(###ÿÿ####Tÿn#ÿÿK#########d#########v###Goal: To optimize
operational capability and readiness by managing risk to accomplish the mission with minimal loss.

###ÿÿ#####ÿ□#ÿÿd#########d##########□###Obviously, we can't eliminate risk in naval aviation, but we can reduce the amount of loss we experience (in personnel, equipment and mission accomplishment).

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#þÿÿ(###ÿÿ####Pÿ□#ÿÿK#########d#########n###* Change - The □Mother□ of Risk    *
Resource Constraints           * New Technology                 * Complexity
                        * Stress
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###ÿÿ#####ÿ□#ÿÿd#########d#########C###These are some of the things we face in the naval service which tend to cause risk:- Change is the big one...anything from a new baby at home to a last minute change in the flight plan. Changes should alert us to new hazards and increased risk.- □Doing more with less□ seems to be the motto of the naval service...how long can we keep stretching our resources? What□s the risk involved?- New technology is great, but sometimes the gain from increased capabilities is offset by our human abilities to absorb all the new information or adapt to the new equipment.- The more complex the problem, usually, the riskier. There are more ways for things to go wrong.- We see in an analysis of mishap causal factors that human error occurs in 80% of our mishaps. Stress significantly affects the ability of those humans to perform!#

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      D#ÿÿ(###ÿÿ####Tÿn#ÿÿK#########d#########u### * Societal Constraints *
Environmental Influences * Human Nature * Speed/Tempo of Operation * High Energy
Levels#
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###ÿÿ#####ÿ□#ÿÿd#########d#########£###- Society□s standards and expectations drive public opinion, which has an important bearing on our budget and livelihood. So things which negatively affect our command image in the public eye can certainly present risk to our organization (and our careers). Crashing into a school, for example, is simply unacceptable.- Environment (e.g. weather, sea state) is always a significant consideration in naval operations. Other environmental influences include things like runway changes and noise limitations.- Humans tend to make mistakes, miscommunicate, have personality conflicts, get fatigued, get complacent and so on. We need to recognize the potential for human nature to present risk in our operations.- Risk certainly increases when the tempo of operations is high. It can also increase when the tempo is low, due to complacency.- Nervous energy, excitement associated with new situations and perceived pressure to perform can all increase risk (ie, NATOPS check, AC emergency). A recent study of AIRLANT/ AIRPAC mishaps shows that 56% of the deployment mishaps over the past 5 years (FY91 through 1st quarter FY96) occurred during the first two months of deployment.#

#################,#########################ÿ□#ÿÿd#########d#########2##□##ùôLý× 4#ÿÿ$###ÿÿ####Uÿ #ÿÿK#########d#########Æ###1. Accept risk when benefits outweigh the   cost.2. Accept no unnecessary risk.3. Anticipate and manage risk by planning.4. Make risk decisions at the right level.

###ÿÿ#####ÿ□#ÿÿd#########d#########}###1. Risk is inherent in combat, and it is related to gain. Normally, the greater the potential gain, the greater the risk.2. FMFM-1: □The acceptance of risk does not equate to the imprudent willingness to gamble.□ We must take only the risks which are necessary to accomplish the mission.3. Risks are more easily controlled when they are identified early in the planning process.4. Normally, this is the leader directly responsible for the operation. However, when that leader determines that the risk is too high, or goes beyond the commander□s stated intent, he should seek additional guidance from the chain of command. #

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ö2ÿ□ýL#ÿÿ####ÿÿ#####ÿ##ÿÿd#########d#########&###Integrates All Typesof Risk
Into Plan

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##H###Conscious Decision      □Can Do□ Regardless of RiskBased on Risk vs.
Benefit
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###ÿÿ#####ÿ□#ÿÿd#########d##########□###Although the five steps of ORM are a lot like the decision-making process that good leaders have always used, applying a standard process is different in some important ways.- ORM is more systematic. Frequently, hazard identification and assessment is random, and highly dependent upon an individual□s past experience and organizational skills. ORM requires the operator(s) to focus on one piece of the puzzle at a time, completing each step before moving on to the next.- ORM is more proactive. It requires an attempt to identify ALL hazards, not just the things that have happened in the past.- ORM addresses all types of risk which could threaten our ability to accomplish the mission during the planning process (security, readiness, communications, enemy threats, fiscal limitations, credibility, health, personal safety, equipment failures, etc.). This allows effective prioritization of risks, which helps focus limited time/assets on the most important issues, rather than addressing safety threats as an after-thought, once the plan has been formulated.- ORM enhances communication about risk by providing a common process and set of terms. Provides a means to articulate concerns/justify decisions.- ORM calls for a conscious decision to accept or reject the assessed risk, based on the potential cost and benefit to the overall mission. It also requires a leader to communicate with the COC when risk > benefit. b

###ÿÿ#####ÿ□#ÿÿd#########d#########e###Risk Management has been highly successful in other organizations.Civilian companies drastically reduced workman’s compensation costs using risk management. (XTRA corporation, international shipping container and tractor trailer leasing co, $2.85 million in 1982, $63,000 in 1994.)Army’s class A aircraft mishap rate was 0.64 in FY96, down 83% from their FY91 rates, and lower than any other service. The Army also demonstrated a 64% reduction in casualties during battalion training cycles, using risk management.In June 96, CVWR-20 completed a highly successful embarkation on board the USS Stennis (first time the entire wing embarked together in 6 years), including 3 days of cyclic night and day flight ops, with only two minor injuries (no lost work days).The George Washington Battle Group, under RADM Giffin’s leadership, completed a very successful six month deployment this year (96) with only a few minor safety and liberty incidents. They set up a long range planning group which applied risk management to every operation at least 5 days in advance, and continually reinforced risk management concepts.#

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#####q##□###ø;þV#¿#ÿÿ####ÿÿ#####ÿ##ÿÿd#########d#########Ç###1.  Time-critical -
On the run#      consideration of the 5 Steps2.  Deliberate - Application of the
     complete 5-Step Process3.  In-depth - Complete 5-Step      Process with
Detailed Analysis#
```

##########ÿ#ÿÿd#########d##############The amount of time and level of detail involved in the five steps varies, depending upon the circumstances.Time-critical ORM entails a quick, mental review or discussion using the five steps during the execution phase of operations/training and for crisis response planning.Deliberate ORM is a slightly expanded, more detailed application of the five steps in planning for an operation or reviewing procedures. This process level is used when there is a good understanding of the issues based on experience.In-depth ORM is basically the same as deliberate, but with a more thorough risk assessment (first two steps). It is used to more thoroughly explore the hazards and their associated risk in a complex operation or system, or one in which the hazards are not well understood.#

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      #####################ÿ□#ÿÿd##########d#########2##□## ùLý.#4#ÿÿ(###ÿÿ####T
ÿn#ÿÿK#########d#########n###  1.  Identify Hazards  2.  Assess Hazards  3.
Make Risk Decisions  4.  Implement Controls  5.  Supervise
```

##########ÿ□#ÿÿd#########d#########é###Let□s talk about the time-critical ORM process. This is ORM on the most basic level, and is used during execution of ops/training or short-fused planning. Most of you probably use it instinctively without recognizing it as a formal process. However, the more deliberate and in-depth ORM you have done, the more systematic and thorough your time-critical ORM will become.1. Visualize the expected flow of events and identify any conditions which might result in personnel injury or death, property damage or degraded mission performance. If some prior planning has been done, focus on changes in the operation from the original plan.2. Determine which of the identified hazards present the greatest risk, considering the potential outcomes and their probability.3. Determine what controls can be implemented to counter the highest-risk hazards and what course of action will best accomplish the mission with an acceptable level of risk. Ensure benefits of the selected course of action outweigh the risk.4. Implement the controls and the course of action decided on in step three.5. Monitor the operation for effectiveness of controls and changes. Correct ineffective controls and begin the ORM process again as further changes occur.#

###ÿÿ#####ÿ□#ÿÿd#########d#########@###Here are some examples of where time-critical ORM would be used.

###ÿÿ#####ÿ□#ÿÿd#########d#########o###Let’s try this time-critical ORM process together. Here’s the scenario:(Turn off projector, hand out example scenario and guide class through 5 steps, writing their responses on the board.) After completing the demonstration, conduct specific applications exercise. Ask group to come up with a list of time-critical ORM applications for their command/wing/MAG.

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